AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-3.   (Canceled)

4.   (Currently Amended) An image processing apparatus comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to one or more of the blocks of the data of the image that correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit;

a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein the changed image rendering unit renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

a rendering position change unit to change the area to be rendered, wherein the predicted block decompression unit predicts the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the rendering position change unit when the rendered image change instruction unit is based on the rendering position change unit,

wherein when the rendering position change unit performs pixel-by-pixel scrolling using a scroll bar, the predicted block decompression unit predicts that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

5-15. (Canceled)

16. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a tile.

17. (Original) The image processing apparatus as claimed in claim 16, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile.

18. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a precinct.

19. (Original) The image processing apparatus as claimed in claim 18, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile.

20. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a code block.

21. (Original) The image processing apparatus as claimed in claim 20, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile..

22-24. (Canceled)

25. (Currently Amended) An image display apparatus, comprising:

a display unit to display information;

a receiver unit to receive via a network a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block; and

an image processing apparatus comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to one or more of the blocks of the data of the image that correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit;

a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein the changed image rendering unit renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

a rendering position change unit to change the area to be rendered, wherein the predicted block decompression unit predicts the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the rendering position change unit when the rendered image change instruction unit is based on the rendering position change unit,

wherein when the rendering position change unit performs pixel-by-pixel scrolling using a scroll bar, the predicted block decompression unit predicts that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

26-28. (Canceled)

29.   (Currently Amended) An image display apparatus, comprising:

a display unit to display information;

an image compression unit to divide data for an image into a plurality of blocks and compresses and encodes each of the blocks into a compressed code; and

an image processing apparatus comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to one or more of the blocks of the data of the image that correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit, the image processing apparatus decompressing the compressed code generated by the image compression unit and causing the compressed code to be rendered on the display unit;

a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein the changed image rendering unit renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

a rendering position change unit to change the area to be rendered, wherein the predicted block decompression unit predicts the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the rendering position change unit when the rendered image change instruction unit is based on the rendering position change unit,

wherein when the rendering position change unit performs pixel-by-pixel scrolling using a scroll bar, the predicted block decompression unit predicts that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

30-31. (Canceled)

32. (Currently Amended) An image processing method comprising:

(a) decompressing, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

(b) causing one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and causing a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

(c) giving an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

(d) decompressing part of the compressed code corresponding to one or more of the blocks of the data of the image that corresponds to the second area of the image and rendering the second area of the image when the instruction is given by giving the instruction to change the area to be rendered;

(e) predicting an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompressing, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein decompressing part of the compressed code renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

(f) changing the area to be rendered, wherein predicting the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the change of the area to be rendered when the instruction is based on the change of the area to be rendered,

wherein when performing pixel-by-pixel scrolling using a scroll bar includes predicting that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

33-35. (Canceled)

36.   (Currently Amended) An article of manufacture having one or more computer-readable recording media storing a program which, when executed by a computer, causes the computer to execute an image processing method comprising:

(a) decompressing, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

(b) causing one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and causing a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

(c) giving an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

(d) decompressing part of the compressed code corresponding to one or more of the blocks of the data of the image that corresponds to the second area of the image and rendering the second area of the image when the instruction is given by giving the instruction to change the area to be rendered;

(e) predicting an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompressing, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein decompressing part of the compressed code renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

(f) changing the area to be rendered, wherein predicting the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the change of the area to be rendered when the instruction is based on the change of the area to be rendered,

wherein when performing pixel-by-pixel scrolling using a scroll bar includes predicting that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

37-38. (Canceled)

39.   (Currently Amended) An image display system including a server computer and a client computer connected to the server computer via a network comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; [[and]]

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to one or more of the blocks of the data of the image that correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit;

a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area, wherein the changed image rendering unit renders the predicted area of the image in the rendering region

when the block corresponding to the predicted area is identical to the block corresponding to the second area; and

a rendering position change unit to change the area to be rendered, wherein the predicted block decompression unit predicts the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the rendering position change unit when the rendered image change instruction unit is based on the rendering position change unit,

wherein when the rendering position change unit performs pixel-by-pixel scrolling using a scroll bar, the predicted block decompression unit predicts that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

40-42. (Canceled)